

---

# Contents

<i>Preface</i> . . . . .	v
<i>Contributors</i> . . . . .	ix
1 A Brief Introduction into the Renin-Angiotensin-Aldosterone System: New and Old Techniques . . . . . <i>Sean E. Thatcher</i>	1
2 A Color Segmentation-Based Method to Quantify Atherosclerotic Lesion Compositions with Immunostaining . . . . . <i>Congqing Wu, Alan Daugherty, and Hong Lu</i>	21
3 Assessment of Protein Carbonylation and Protein Tyrosine Phosphatase (PTP) Oxidation in Vascular Smooth Muscle Cells (VSMCs) Using Immunoblotting Approaches . . . . . <i>Sofia Tsiropoulou and Rhian M. Touyz</i>	31
4 Methods for Studying the Role of RAAS in the Modulation of Vascular Repair-Relevant Functions of Stem/Progenitor Cells. . . . . <i>Yagna P.R. Jarajapu</i>	47
5 Use of a Fluorescent Substrate to Measure ACE2 Activity in the Mouse Abdominal Aorta . . . . . <i>Yu Wang, Lisa A. Cassis, and Sean E. Thatcher</i>	61
6 Measuring Blood Pressure Using a Noninvasive Tail Cuff Method in Mice . . . . . <i>Yu Wang, Sean E. Thatcher, and Lisa A. Cassis</i>	69
7 Blood Pressure Monitoring Using Radio Telemetry Method in Mice. . . . . <i>Yu Wang, Sean E. Thatcher, and Lisa A. Cassis</i>	75
8 Characterization and Functional Phenotyping of Renal Immune Cells via Flow Cytometry . . . . . <i>Nathan P. Rudemiller and Steven D. Crowley</i>	87
9 Assessment of the Renin–Angiotensin System in Cellular Organelle: New Arenas for Study in the Mitochondria . . . . . <i>Bryan A. Wilson and Mark C. Chappell</i>	99
10 Comprehensive Assessments of Energy Balance in Mice. . . . . <i>Justin L. Grobe</i>	123
11 In Vitro Assays to Determine Smooth Muscle Cell Hypertrophy, Protein Content, and Fibrosis . . . . . <i>Katherine J. Elliott and Satoru Eguchi</i>	147
12 A New Mouse Model for Introduction of Aortic Aneurysm by Implantation of Deoxycorticosterone Acetate Pellets or Aldosterone Infusion in the Presence of High Salt . . . . . <i>Shu Liu, Ming C. Gong, and Zhenheng Guo</i>	155

13	Fluorescence-Based Binding Assay for Screening Ligands of Angiotensin Receptors . . . . .	165
	<i>Maiia E. Bragina, Nikolaos Stergiopoulos, and Rodrigo A. Fraga-Silva</i>	
14	A Primer to Angiotensin Peptide Isolation, Stability, and Analysis by Nano-Liquid Chromatography with Mass Detection. . . . .	175
	<i>Mariola Olkowicz, Stefan Chlopicki, and Ryszard T. Smolenski</i>	
15	Analysis of Angiotensin Metabolism in the Kidney Using Mass Spectrometry . . .	189
	<i>Nadja Grobe and Khalid M. Elased</i>	
	Erratum to . . . . .	E1
	<i>Index</i> . . . . .	199